Operable Unit 3

Facilities Closure and Demolition Project

March 1997

Operable Unit 3 -- the Facilities Closure and Demolition Project -- involves the remediation of more than 200 former uranium processing facilities and equipment at the Fernald Environmental Management Project (FEMP). When the FEMP discontinued production operations in 1989, many production facilities, including process lines, drumming stations and equipment still contained quantities of raw, intermediate and finished uranium products.

The mission of Operable Unit 3 mission is to remove legacy nuclear materials currently stored in FEMP buildings, clean out the buildings and equipment, and decontaminate and dismantle these facilities. Operable Unit 3 also addresses above- and below-grade improvements not covered by the FEMP's other operable units.

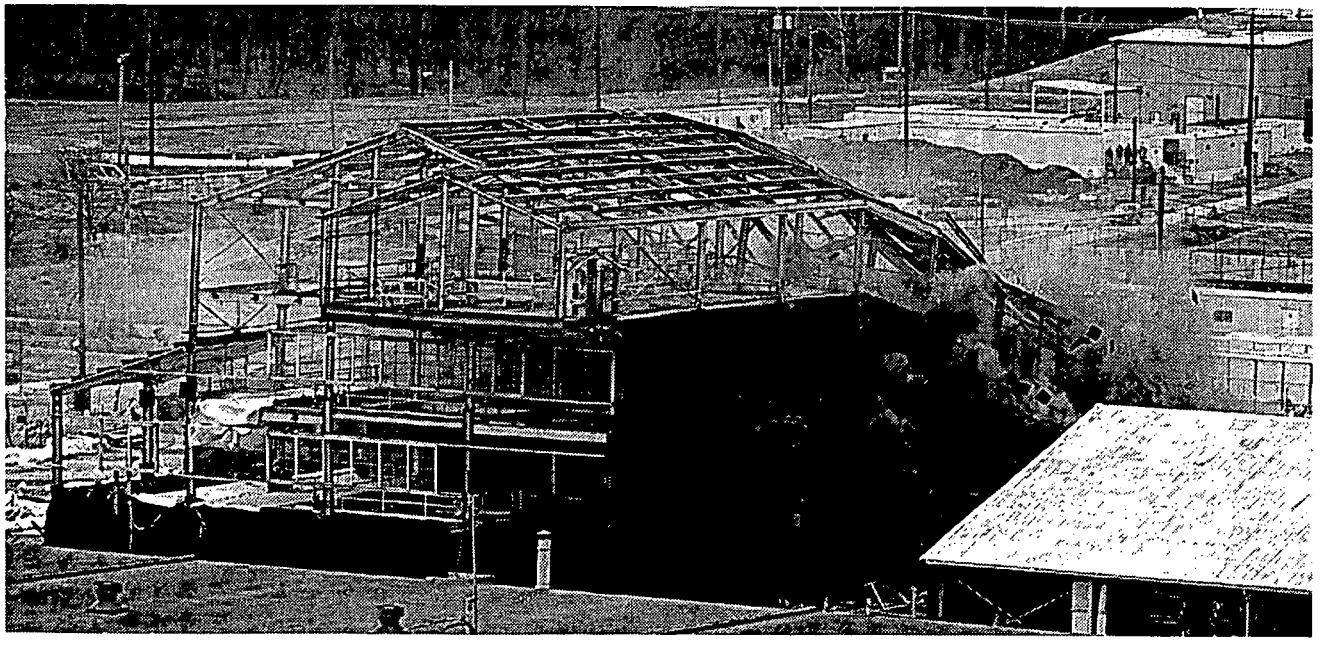
Interim Remedial Action

To accelerate decontamination and dismantlement of contaminated, deteriorating buildings and structures, DOE and the U.S. Environmental Protection Agency (EPA) signed the *Operable Unit 3 Record of Decision for Interim Remedial Action* on July 22, 1994. The interim action eliminated several years of work and saved taxpayers millions of dollars.

Final Remedial Action

On Sept. 24, 1996, U.S. EPA, Ohio EPA and DOE signed the *Operable Unit 3 Record of Decision for Final Remedial Action.* This record of decision addresses treatment and final disposition of contaminated materials generated by demolition activities in the FEMP's 136-acre former production area.

Saving years of work and millions of dollars, Operable Unit 3's interim remedial action enabled DOE to accelerate decontamination and dismantlement of contaminated production buildings, such as Plant 1, the former incoming materials sampling plant. Plant 1 was the third of 10 major plants dismantled as part of the FEMP cleanup mission (6080-609).



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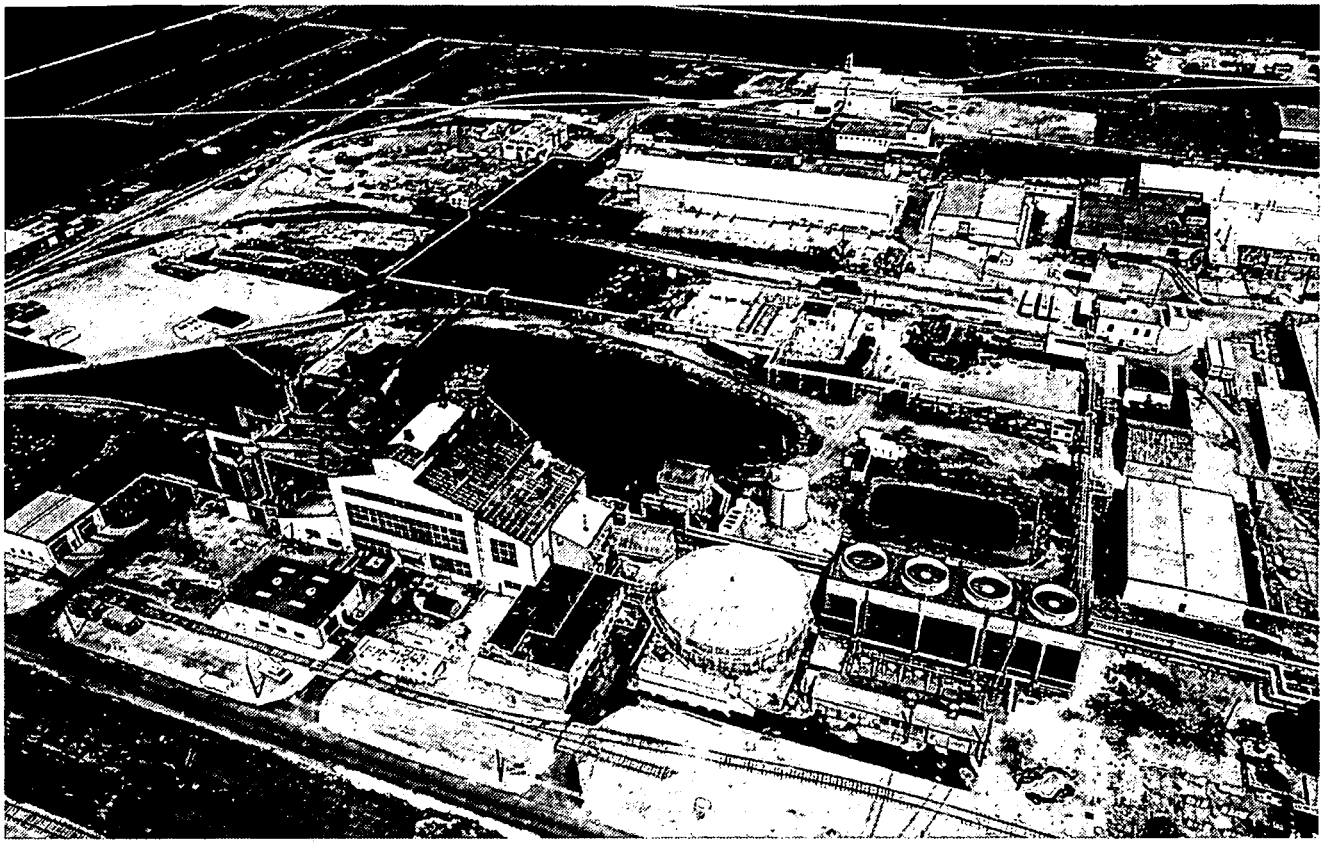

On Feb. 27, 1997, Fluor Daniel Fernald awarded the decontamination and dismantling Boiler Plant/Water Plant (BP/WP) Complex project to Foster Wheeler Environmental Corp., of Livingston, N.J. Under its 18-month, firm-fixed price subcontract (approximately $4 million), Foster Wheeler Environmental Corp. will decontaminate and demolish the BP/WP structures and segregate, cut, and containerize the construction debris. (6385-187).

The final remedial action integrates programmatic (ongoing) Operable Unit 3 removal actions and the *Operable Unit 3 Record of Decision for Interim Remedial Action.*

Site-wide Remedial Strategy

Operable Unit 3 remediation plans are consistent with the site-wide remedial strategy which involves balancing off-site disposal of highly contaminated wastes with on-property disposal of less-contaminated wastes. Building removal is planned to coincide with soil excavation in adjacent areas of the site to minimize the staging duration of materials prior to disposal and avoid potential for contaminating clean areas.

The strategy is to continually collapse and consolidate radiologically contaminated zones so they become smaller and fewer until only the On-Site Disposal Facility remains. DOE and Fluor Daniel Fernald will evaluate recycling options and new technologies to help minimize the contaminated material going into the On-Site Disposal Facility.

Decontamination and Dismantling Activities

Decontamination and dismantling projects already completed at the FEMP include: Plant 7; Plant 4; Plant 1; the Plant 1 Ore Silos, the Fire Training Facility, the Hydrofluoric Acid Tank Car, the Nitric Acid Tank Car, several drum storage warehouses, tanks, and other small structures.

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Removal Actions

One of the objectives of the *Operable Unit 3 Record of Decision for Final Remedial Action* is to integrate ongoing removal actions with cleanup activities. Four of the original 30 site removal actions are ongoing: Removal of Waste Inventories (Removal Action 9); Safe Shutdown (Removal Action 12); Improved Storage of Soil and Debris (Removal Action 17); Asbestos Abatement (Removal Action 26).

Removal of Waste Inventories (Removal Action 9)

This removal action involves the safe, off-site disposal of existing waste inventories to the Nevada Test Site (NTS) in compliance with DOE Orders, Department of Transportation shipping requirements and NTS acceptance criteria.

The FEMP currently has an inventory of low-level radioactive waste, mixed waste (waste that is both hazardous and radioactive) and polychlorinated biphenyl (PCB) wastes resulting from production operations. These waste streams include: process area scrap wastes (scrap metal and wood); construction and removal action wastes (demolition debris); uranium production residues; baled trash; processed metal waste; and thorium wastes.

Safe Shutdown (Removal Action 12)

This removal action involves the removal and proper disposition of all nuclear product and in-process residue materials, excess supplies, chemicals, and associated process equipment that were abandoned when the FEMP ended production in 1989. This removal action also provides for the isolation and de-energizing of production-related equipment and utilities and the identification of potential customers of FEMP equipment and nuclear products.

In March 1997, Fluor Daniel Fernald workers completed safe shutdown activities in Plant 5, the former Metals Production Plant, where UF_4 (green salt) was converted to uranium metal derbies (6401-159).

Improved Storage of Soil and Debris (Removal Action 17)

This removal action provides controlled storage of excess contaminated soil and debris generated during FEMP maintenance, construction, removal and remedial actions. It establishes the framework and procedures for managing and storing soil and debris generated during FEMP cleanup.

Asbestos Abatement (Removal Action 26)

This removal action mitigates potential asbestos release and migration. Conducted before decontamination and dismantling activities begin, asbestos abatement activities include in situ repair, encasement, encapsulation, and removal of asbestos-containing materials.

Scrap Metal Piles (Removal Action 15)
In November 1996, U.S. EPA approved the final phase of the Scrap Metal Piles. Phase 1, which involved containerizing 1,400 tons of scrap copper and about 2,270 tons of recoverable stockpiled ferrous and nonferrous scrap metal to eliminate potential environmental threats, was completed in 1994. Several activities regarding potential beneficial reuse of the scrap copper remain.

Nuclear Materials
Since production ended in 1989, approximately half of the FEMP's 32-million-net-pound inventory of uranium metal products have been removed from the site and transferred to other DOE sites for their use or sold to commercial vendors for non-military use.

The remaining inventory is scheduled to be removed from the site by April 1999. DOE and Fluor Daniel Fernald are negotiating contracts for the sale of the remaining inventory or seeking other disposition options. As of mid-April 1997, depleted uranium metal products represent about 8.5 million net pounds of the remaining goods; enriched products total 6.7 million pounds; and normal uranium – containing 0.7 percent of the compound uranium-235 as uranium is mined from the earth – represents about 440,000 net pounds.

DOE and Fluor Daniel Fernald continue to seek alternative off-site storage facilities for remaining uranium metal products as a contingency, since the buildings currently housing these products are targeted for dismantling.

Among the FEMP's product inventory are uranium derbies; each can weigh between 300 and 375 pounds.

Hazardous Waste Management Units
On Nov. 20, 1996, the Ohio EPA approved the last of 13 clean closure certifications for Resource Conservation and Recovery Act (RCRA) Hazardous Waste Management Units (HWMU), resulting in a significant regulatory and cleanup accomplishment. Closure of the HWMUs, which included a tank car, storage tanks, a dust collector and other equipment, was completed safely and in accordance with regulatory guidelines. Remaining requirements for HWMUs have been integrated into cleanup activities; no additional closure plans will be required.

For More Information

For specific questions regarding Operable Unit 3, contact John Trygier, DOE FEMP Operable Unit 3 branch chief, 513-648-3154; or send an e-mail message to John_Trygier@fernald.gov.

For more information about the PEIC and its resources, call Rene Eichhold, 513-738-0164, or send an e-mail message to Rene_Eichhold@fernald.gov.

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